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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,810	09/30/2003	Chuck DeSylva	10559-853001/P17234/Intel	3079
20985 7590 09/25/2007 FISH & RICHARDSON, PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER WOOD, WILLIAM H	
			ART UNIT 2193	PAPER NUMBER
			MAIL DATE 09/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/676,810

Applicant(s)

DESYLVA ET AL.

Examiner

William H. Wood

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-26 are pending and have been examined.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 7-8, 10-11, 14-15, 17, 22 and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by **Ball** (USPN 5,615,357).

Claim 1

Ball disclosed a machine-implemented method comprising:

sampling machine instructions being performed by a processor (*figure 5A*);

identifying instruction types of the sampled machine instructions (*figure 5A*); and

presenting a metric indicating utilization of the processor by identified instruction types (*figure 5A*).

Claim 7

Ball disclosed the method of claim 1, further comprising selecting the instruction types to be identified from a set of available instruction categories based on received input (*column 2, lines 40-43, certain classes*).

Claim 8

Ball disclosed the method of claim 1, further comprising logging to an output file the utilization of the processor by identified instruction types (*figure 5A, element 56*).

Claim 10

Ball disclosed the method of claim 1, further comprising displaying actual processor speed in real time as the speed varies (*column 2, lines 32, execution-driven*).

Claims 11, 14-15, 17, 22 and 24-26

The limitations of claims 11, 14-15, 17, 22 and 24-26 correspond to the limitations of claims 1, 7-8 and 10 and as such are rejected in the same manner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2193

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-6, 9, 12-13, 16, 18-21 and 23 are rejected under 35 U.S.C.

103(a) as being unpatentable over **Ball** (USPN 5,615,357) in view of

Krishnaswamy et al. (USPN 6,622,300).

Claim 2

Ball did not explicitly state the method of claim 1, wherein sampling the machine instructions comprises: identifying machine instructions to be retired from the processor; and storing information corresponding to the machine instructions to a shared memory region. **Krishnaswamy** demonstrated that it was known at the time of invention to identify retired instructions (column 6, lines 25-26) and to store information in a shared memory (column 3, lines 41-43). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the sampling system of **Ball** with sampling from a retired area and storing in shared memory as found in **Krishnaswamy**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to make information shared across a computer system (**Krishnaswamy**: column 3, lines 25-27) and to collect information without being intrusive (**Krishnaswamy**: column 6, lines 41-45).

Claim 3

Ball and **Krishnaswamy** disclosed the method of claim 2, wherein identifying machine instructions to be retired from the processor comprises reading a reorder buffer in the processor (*column 9, line 23*).

Claim 4

Ball and **Krishnaswamy** method of claim 2, wherein the shared memory region comprises physical memory (*column 4, lines 30-32*), and identifying the instruction types comprises decoding the information stored in the shared memory region (*column 3, lines 47-48*).

Claim 5

Ball and **Krishnaswamy** method of claim 2, wherein presenting the metric comprises displaying a representation of real-time instruction mix utilization including an indication of a percent of the machine instructions that are optimized for the processor (**Ball**: *column 3, lines 59-61; column 2, lines 43-50, instructions executed are optimized for the processor to which they belong*).

Claim 6

Ball and **Krishnaswamy** method of claim 2, wherein sampling the machine instructions occurs in kernel-mode, identifying the instruction types occurs in

user-mode, and presenting the metric occurs in user-mode (**Krishnaswamy**: column 47-50; column 3, lines 51-52).

Claim 9

Ball did not explicitly state, but **Krishnaswamy** did disclose the method of claim 1, further comprising:

presenting a user interface capable of receiving adjustments to a sampling interval and a sampling rate (column 6, lines 30-33, programmed counters, certain number of events); and

adjusting the sampling of machine instructions based on input received via the user interface (column 6, lines 30-33, programmed counters).

It would have been obvious to one of ordinary skill in the art at the time of invention to implement the sampling system of **Ball** with programmable counters for sampling as found in **Krishnaswamy**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to collect information without being intrusive (**Krishnaswamy**: column 6, lines 41-45).

Claims 12-13, 16, 18-20 and 23

The limitations of claims 12-13, 16, 18-20 and 23 correspond to the limitations of claims 2-6 and 9 and as such are rejected in the same manner.

Claim 21

Ball and **Krishnaswamy** disclosed the system of claim 20, wherein the instruction mix monitor further comprises an instruction categories selection interface (***Krishnaswamy**: column 6, lines 30-32, programmed*).

Response to Arguments

5. Applicant's arguments filed 23 July 2007 have been fully considered but they are not persuasive. Applicant argues **Ball** fails to disclose: ¹⁾ the limitations "sampling machine instructions being performed by a processor" and "presenting a metric indicating utilization of the processor by identified instruction types" as recited by the independent claims; ²⁾ selecting instruction types as recited in claim 7; and ³⁾ "displaying actual processor speed in real time as the speed varies" as recited in claim 10. These arguments are not persuasive for the following reasons.

First, figure 5A of **Ball** clearly indicate the sampler 58 retrieving a sample of instructions "being performed"/executed 54 by a processor. Whether there is a step or mechanism between the sampler and the processor does not change this basic fact. The broad limitation clearly reads upon **Ball**. Additionally, the trace file itself is a sample of the instructions executed by the processor. Undeniably, **Ball** discloses "sampling machine instructions being performed by a processor". Merely sampling instructions is a "metric *indicating* utilization of the processor by identified instructions types". Under the

broadest reasonable interpretation of the claim language, the instruction itself identifies its type and having been sample indicates utilization by the processor.

Second, the instruction types to be identified belong to categories (**Ball:** column 2, lines 40-43, classes). The selection of instruction types to be identified is based upon received input (**Ball:** figure 5A, the input of which instructions were executed).

Third, the use of execution-driven does indicate the results are produced are real-time. Under the broadest reasonable interpretation of the claim language, the prior art must demonstrate real-time processor speed. The claim does not indicate display must be real-time. The phrase “a trace driven mode” does not alter this analysis. As to claim 25, “real time” is not contextualized to any particular element or step other than the display means. Therefore, the broadest reasonable interpretation merely requires the displaying happen in real time to itself (that is as display at the rate of display).

Having addressed Applicant’s raised concerns, the rejections are maintained.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

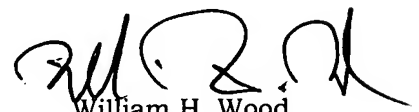
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 10:00am - 4:00pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)-272-3756. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR systems, see <http://pair-direct.uspto.gov>. For questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



William H. Wood
Patent Examiner
AU 2193

September 18, 2007